

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6	("5230849" "5256499" "7074513").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:23
L2	11036	(sofc "solid oxide")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:11
L3	22	2 and ((collector collecting) near5 (undulat\$4 corrugat\$4))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:56
L4	1	10/500515	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:24
L5	7	("5300376"   "5399438"   "5643690"   "5698337"   "5874374"   "5885309").PN. OR ("6645657").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:27
L6	19	("4404267"   "4548876"   "4702973"   "4755376"   "5114810").PN. OR ("5643690").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:28
L7	900528	((collector collecting) )	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:29
L8	898470	7 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:29
L9	2058	7 not 8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:29
L10	259	7 not 8	EPO; JPO; DERWENT	OR	ON	2008/01/07 12:33

## EAST Search History

L11	1799	9 not 10	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:33
L12	740	11 not (429/12-46.ccls.)	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:33
L13	1059	11 not 12	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:35
L14	26	("20030077498" "20030096147" "20030118879" "20040028975" "20040053100" "20040115503" "20050008909" "20050221131" "20050227134" "20050249993" "5089455" "5190834" "5273837" "5554454" "5595833" "5750279" "5925477" "6183897" "6479178" "6485852" "6623881" "6638654" "6649295" "6677070" "6680139" "6852436").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:35
L15	48	("5273837").URPN.	USPAT	OR	ON	2008/01/07 12:37
L16	24	("20020012825"   "20020132156"   "4135041"   "4913982"   "5162167"   "5213910"   "5215946"   "5248712"   "5256499"   "5273837"   "5290642"   "5342705"   "5368667"   "5382315"   "5501914"   "5518829"   "5589017"   "5641585"   "5733499"   "5955392"   "6001761"   "6361892"   "6582845"   "6835488").PN. OR ("7045237").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:51
L17	10	("4983472"   "4997727"   "5273837"   "5350642"   "5942349").PN. OR ("6492053").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:52
L18	18	("4450212"   "4604331"   "4751153"   "4943495"   "4950562").PN. OR ("4997727").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 12:53
L19	74105	((collector collecting) near7 (flow reactant channels))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:58

## EAST Search History

L20	73776	19 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:58
L21	329	19 not 20	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 12:58
L22	1	2003-600379.NRAN.	DERWENT	OR	ON	2008/01/07 13:00
L23	1	2005-562704.NRAN.	DERWENT	OR	ON	2008/01/07 13:02
L24	12	("20050053819" "4182795" "4567117" "4647516" "4702973" "5075277" "5496655" "5660941" "6051329" "6051330" "6492045" "6576199").PN.	DERWENT	OR	ON	2008/01/07 13:11
L25	1	"6777126".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:11
L26	1	25 and 2	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:13
L27	11038	(sofc "solid oxide")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:13
L28	2446	27 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:13
L29	8592	27 not 28	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:13

## EAST Search History

L30	7307	29 not (current adj (collect\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:23
L31	1285	29 not 30	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:17
L32	4	"03263766"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:17
L33	2	"6071635".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:23
L34	1	33 and (current adj (collect\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:26
L35	7	("6268076").URPN.	USPAT	OR	ON	2008/01/07 13:25
L36	1	"6656624".pn.	USPAT	OR	ON	2008/01/07 13:26
L37	0	36 and (current adj (collect\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:26

# EAST Search History

L38	147	("20010031389"   "20020068208"   "2008800"   "3432357"   "3615862"   "3616841"   "3617385"   "3772086"   "3960601"   "4044193"   "4058482"   "4125676"   "4131721"   "4168351"   "4175165"   "4192907"   "4356240"   "4365007"   "4372759"   "4390446"   "4396480"   "4413041"   "4458411"   "4463065"   "4496437"   "4525440"   "4529677"   "4556613"   "4735872"   "4769297"   "4800138"   "4818741"   "4876115"   "4910099"   "4910106"   "4925749"   "4973358"   "4973532"   "4988583"   "5008163"   "5013618"   "5068161"   "5071717"   "5079105"   "5108849"   "5110692"   "5139896"   "5242764"   "5264299"   "5316747"   "5318863"   "5344724"   "5360679"   "5364712"   "5366819"   "5366821"   "5418079"   "5432021"   "5434020"   "5441819"   "5441821"   "5482680"   "5482792"   "5503944"   "5518831"   "5521018"   "5527363"   "5547776"   "5565072"   "5578388"   "5589285"   "5599638"   "5604057"   "5607770"   "5624769"   "5660941"   "5674644"   "5683828"   "5707755"   "5763114"   "5773162"   "5776624"   "5776625"   "5827495"   "5848351"   "5853910"   "5858567"   "5863671"   "5879826"   "6007932"   "6017650"   "6020083"   "6022634"   "6033804"   "6037076"   "6051117"   "6051331"   "6074692"   "6096448"   "6096449"   "6096450"   "6099984"   "6103077"   "6106964"   "6110333"   "6124053"   "6127056"   "6140266"   "6146780"   "6146781"   "6150056"   "6165633"   "6197445"   "6203940"   "6207208"   "6207209"	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:26
1/7/2008 4:15:21 PM C:\Documents and Settings\ocantelm\My Documents\EAST\Workspaces\10500515B.wsp						Page 5

## EAST Search History

L39	1	("5338621").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:27
L40	10	("3400054"   "4416747").PN. OR ("5338621").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:28
L41	8	("3718506"   "5338621"   "5902692"   "5998053").PN. OR ("6432567").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:28
L42	32	("4431714"   "5045413"   "5077148"   "5084364"   "5100743"   "5227256"   "5273837"   "5338621"   "5342706"   "5362578"   "5384208"   "5405712"   "5795665"   "5906898").PN. OR ("6040076").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:29
L43	33	("4311569"   "4315805"   "4316782").PN. OR ("4416747"). URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:30

## EAST Search History

L44	64	( "4169917"   "4175165"   "4476197"   "4510212"   "4548876"   "4604331"   "4631239"   "4702973"   "4753857"   "4781996"   "4853301"   "4855193"   "4857420"   "4977041"   "4978589"   "4983472"   "5084364"   "5227256"   "5298342"   "5362578"   "5424144"   "5460897"   "5482792"   "5503945"   "5527363"   "5558955"   "5707755"   "5726105"   "5733682"   "5770327"   "5773160"   "5773161"   "5776624"   "5795665"   "5798187"   "5798188"   "5811202"   "5833822"   "5846668"   "5922485"   "5942349"   "6033794"   "6037073"   "6040073"   "6040075"   "6040076"   "6045934"   "6045935"   "6048633"   "6048634"   "6048636"   "6050331"   "6051330"   "6051331"   "6054228"   "6054231"   "6071635"   "6071636"   "6074692"   "6080502"   "6096450"   "6099984"   "6103415"   "6117580").PN. OR ("6855447").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:32
L45	22	( "3432357"   "3516867"   "4788110"   "5110692"   "5130008").PN. OR ("5384208"). URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:34
L46	61	( "3394032"   "3492161"   "4037023"   "4276355"   "4344832"   "4478918"   "4678724"   "4988583"   "5108849"   "5230966"   "5232792"   "5300370"   "5384208"   "5472801"   "5496655"   "5503944"   "5514487"   "5521018"   "5527363"   "5643690"   "5683828"   "5776624").PN. OR ("5981098").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:35
L47	15	("3516867").URPN.	USPAT	OR	ON	2008/01/07 13:36

## EAST Search History

L48	61	("4468300"   "4476196"   "4476198"   "4510212"   "4629537").PN. OR ("4857420").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:42
L49	1	"5145753".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:42
L50	1	49 and support	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:42
L51	8	("4510212"   "4666798"   "4799936"   "4857420"   "4997726").PN. OR ("5145753").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:43
L52	20	("4857420"   "5162167"   "5523152").PN. OR ("5385792").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:46
L53	7	("4781727"   "5385792"   "5585203").PN. OR ("6096451").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:49
L54	61	("4468300"   "4476196"   "4476198"   "4510212"   "4629537").PN. OR ("4857420").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:50
L55	14	("3819387"   "4105826"   "4199340"   "4315991"   "4615935"   "4828597"   "5312700"   "5475567"   "5496655"   "5585203"   "5750279"   "5942348"   "6165632").PN. OR ("6656625").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 13:57
L56	4662	sofc ("solid oxide")	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:57
L57	3758	56 and h01m\$.ipc.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 13:58
L58	2726	57 not us.pc.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 14:16
L59	1301	429/12-46.ccls.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 14:17



## EAST Search History

L60	16064	429/12-46.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:17
L61	606	60 and 2.ti.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:17
L62	728	60 and 2.ab.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:17
L63	854	61 62	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:18
L64	1	"4416747".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:18
L65	1	64 and (fuel adj cell)	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:24
L66	3	("5230849" "5256499" "7074513").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 14:26
L67	2	"08078040"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 14:26
L68	604110	(cathode "air electrode")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 14:57
L69	436363	(anode "fuel electrode")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 14:58
L70	5280	69 with (fiber fibre fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:00
L71	5132	70 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 14:58

## EAST Search History

L72	148	70 not 71	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 14:58
L73	50450	(nickel ceramic) near5 (fiber fibre fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:05
L74	50148	73 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:00
L75	302	73 not 74	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:00
L76	201	73 with 69	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:00
L77	21	75 and 76	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:01
L78	29	("3835514"   "3895960"   "4395468"   "4447509"   "4490444"   "4582766"   "4597170"   "4598028"   "4609562"   "4702971").PN. OR ("4847172").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 15:02
L79	14	78 and (fiber fibre fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:04
L80	347	ihringer closset sfeir bucheli	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:05

## EAST Search History

L81	3	80 and 73	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:05
L82	45764	(ceramic) near5 (fiber fibre fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:05
L83	119	68 with 82	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:06
L84	102	83 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:06
L85	17	83 not 84	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:10
L86	7636	lsm lsc	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:10
L87	72	86 near7 (fiber fibre fibrous fibril)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:11
L88	70	87 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:10
L89	2	87 not 88	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:11
L90	3151	(la lanthanum) near10 (whisker fiber fibre fibrous fibril)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12

## EAST Search History

L91	3149	90 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:11
L92	2	90 not 91	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:11
L93	46484	(sofc "solid oxide" "solid electrolyte")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12
L94	59205	(la lanthanum ceramic lsm lsc) near10 (whisker fiber fibre fibrous fibril)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12
L95	58493	94 not 93	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12
L96	712	94 not 95	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12
L97	356	96 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12
L98	356	96 not 97	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:12
L99	33343	(fibers fibril whisker fibrous) near7 ("zro.sub.2" "zirconium oxide" zirconia! "al.sub.2 o.sub.3" "aluminum oxide" alumina! magnesia! "magnesium oxide" mgo nickel titania! "tio.sub.2" "titanium oxide" "titanium dioxide" ceria! "cerium oxide" ceo.sub.2" "srtio.sub.3" "strontium titanate" "iron oxide" "fe.sub.3 o.sub.4")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:42

## EAST Search History

L100	32690	99 not 93	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:26
L101	653	99 not 100	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:27
L102	399	101 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:47
L103	254	101 not 102	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:28
L104	26	101 not 102	EPO; JPO; DERWENT	OR	ON	2008/01/07 15:28
L105	254	103 not104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:42
L106	228	103 not 104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:43
L107	607834	(cathode "air electrode" "oxygen electrode")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:43
L108	609181	(cathode "air electrode" "oxygen electrode" "air pole" "oxygen pole")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:50
L109	5	108 same ((lsm lsc lantanium lanthanide perovskite) near7 (fiber fibre fibril fibrous whisker))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:47

## EAST Search History

L110	22	108 same ((lsm lsc lantanum lanthanide perovskite la) near7 (fiber fibre fibril fibrous whisker))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:54
L111	17	110 not 109	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:46
L112	477	108 same 99	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:47
L113	367	112 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55
L114	110	112 not 113	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:47
L115	166	108 with reinforc\$4 with (fiber fibril fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55
L116	5680	108 with ((lsm lsc lantanum lanthanide perovskite la))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:54
L117	4588	116 not (sofc "solid oxide" "solid electrolyte")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55
L118	1092	116 not 117	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55
L119	111	118 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55

## EAST Search History

L120	981	118 not 119	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55
L121	281	118 not 119	EPO; JPO; DERWENT	OR	ON	2008/01/07 15:55
L122	3	120 with (fiber fibril fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:56
L123	6803	108 with (fiber fibril fibrous)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:56
L124	43	120 and 123	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 15:56

# EAST Search History

L125	125	(US-20040101742-\$ or US-20040224191-\$ or US-20050142408-\$ or US-20050164049-\$ or US-20060204806-\$ or US-20070003819-\$ or US-20070134539-\$ or US-20070134540-\$ or US-20070141435-\$ or US-20070259242-\$ or US-20050249993-\$ or US-20070122674-\$).did. or (US-3394032-\$ or US-4182795-\$ or US-4365007-\$ or US-4548876-\$ or US-4788110-\$ or US-4983472-\$ or US-4988582-\$ or US-5330859-\$ or US-5376468-\$ or US-5660941-\$ or US-5789094-\$ or US-6048636-\$ or US-6232009-\$ or US-6255012-\$ or US-6383677-\$ or US-6649297-\$ or US-6780533-\$ or US-6838203-\$ or US-6855447-\$ or US-6864009-\$ or US-6942943-\$ or US-7087330-\$ or US-7112379-\$ or US-7122268-\$ or US-7144649-\$ or US-7179557-\$).did. or (US-5643690-\$ or US-5273837-\$ or US-7045237-\$ or US-6492053-\$ or US-4997727-\$ or US-6071635-\$ or US-6268076-\$ or US-6656624-\$ or US-5338621-\$ or US-6040076-\$ or US-4416747-\$ or US-5795665-\$ or US-5384208-\$ or US-5981098-\$ or US-3516867-\$ or US-4037023-\$ or US-6974648-\$ or US-7070872-\$ or US-4169917-\$ or US-4857420-\$ or US-5145753-\$ or US-5385792-\$ or US-5882809-\$ or US-6096451-\$ or US-6656625-\$ or US-6183897-\$ or US-4847172-\$).did. or (US-5069987-\$).did. or (US-3394032-\$).did. or (EP-572017-\$ or DE-4307967-\$ or WO-9004860-\$ or WO-9836464-\$).did. or (JP-63058768-\$ or JP-04079163-\$ or JP-04169071-\$ or JP-06068885-\$ or JP-08078040-\$ or JP-2002334706-\$ or JP-2004127635-\$ or JP-03102779-\$ or JP-03263766-\$ or JP-09190829-\$ or JP-2000133293-\$ or JP-03283266-\$ or JP-08222245-\$ or JP-09092305-\$ or JP-09306518-\$ or JP-06036783-\$ or JP-04071165-\$ or JP-02220560-\$ or	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2008/01/07 16:14
1/7/2008 4:15:21 PM	C:\Documents and Settings\can\My Documents\EAST\Workspaces\105005158.wsp					Page 16



## \* NOTICES \*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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DETAILED DESCRIPTION

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## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the fiber consolidation conductivity ceramics, especially the fiber consolidation conductivity ceramics used considering this as a cel base of a solid-state electrolytic type fuel cell.

[0002]

[Description of the Prior Art] as perovskite mold oxide powder -- general formula  $(La_{1-x}M_x)_{1-y}MnO_3$  (here -- M -- calcium --) The element chosen from Sr and Ba,  $0 < x \leq 0.4$ , and the thing shown by  $0 \leq y \leq 0.2$  are made well-known. About the conductive porous-ceramics sintered compact which consists of a perovskite oxide shown by this formula, the composite which \*\*\*\* other members on this front face, or comes to apply that slurry is also known.

[0003]

[Problem(s) to be Solved by the Invention] however -- \*\* a crack and a crack occur with the residual stress generated by the difference in coefficient of linear expansion with the conductive porous ceramics which consist of a membrane formation side new about this composite, and a perovskite oxide -- especially -- When using it at the elevated temperature of 1,000 degrees C, by the thermal shock, a crack and a crack may occur in the conductive porous ceramics which consist of a perovskite oxide. Moreover, since it says that the flexural strength of this base material is weak about this conductive porous-ceramics sintered compact, this is used as a cel base of cylindrical [ of a solid electrolyte fuel cell (SOFC) ], or a plate mold, for example, it is now. If a 1,000-degree C generation-of-electrical-energy trial is performed, the trouble that this conductive ceramic sintered compact crack-comes to be easy will occur.

[0004] Moreover, the flexural strength of this conductive porous-ceramics sintered compact sets M of this perovskite oxide to Sr, and is  $x = 0.15$  and  $y = 0.1$ . If it solves and this is made into a precise object 100MPa Although it becomes Since lowering of flexural strength is generally seen with the increment in whenever [ pore ] when using it as a cel base of SOFC which gives gas permeability, if this is made into a porous body with 30% of pore, the flexural strength of this base material is 50MPa(s). It falls to extent.

[0005]

[Means for Solving the Problem] It is characterized by this carrying out 5-50 capacity % mixing of the ceramic fiber, and fabricating and coming to sinter it to the perovskite mold oxide powder shown by general formula  $(La_{1-x}M_x)_{1-y}MnO_3$  (the element with which M is chosen from calcium, Sr, and Ba here,  $0 < x \leq 0.4$ , and  $0 \leq y \leq 0.2$ ) about the fiber consolidation conductivity ceramics with which this invention solved such disadvantage and a trouble.

[0006] What is necessary is just to let it be the lanthanum comics night powder shown by general formula  $(La_{1-x}M_x)_{1-y}MnO_3$  (Mx and y are the same as the above) as a multiple oxide which has the uniform crystal of a perovskite single phase as this perovskite mold oxide, although 5-50 capacity % mixing of the ceramic fiber is carried out, and it fabricates, it sinters to perovskite mold oxide powder

and this invention becomes it, as this was described above about the fiber consolidation conductivity ceramics.

[0007] Moreover,  $\text{TiO}_2$  and  $\text{ZnO}$  by which the ceramic fiber added by this is known as a ceramic fiber, Although what is necessary is just to have fibrosed by the melting fibrosing method, the precursor fibrosing method, etc.,  $\text{MgO}$ , aluminum  $2\text{O}_3$ ,  $\text{TiB}_2$ , etc. Its attention is paid to a whisker also in the fiber-reinforced ceramics (FRC) known as reinforcement of the ceramics about this. Since a whisker is very powerful fibrous matter which consists of a single crystal without a defect, it does not react chemically in the matrix of the conductive ceramics and this distributes and remains by the shape of a whisker when the effectiveness is investigated especially It was found out that high flexural strength and high toughness are given to this sintered compact.

[0008] In addition, although it is good to choose the whisker which has the melting point of 1,450 degrees C or more which is the sintering temperature of the conductive ceramics about this ceramic fiber, this is good also as any of the above-mentioned metallic oxide, and since all these react that it is chemical with the constituent of lanthanum comics night powder, if this is made to exist in lanthanum comics night powder, they can give high toughness to the fiber consolidation conductivity ceramics.

[0009] In addition, the effectiveness of [ fiber / this / ceramic / since the diameter of fiber is thin in less than 0.01 micrometers ] crack diffraction in the diameter of fiber is not fully acquired. by that (a problem appears in a degree of sintering) which the consistency of a base material will not fully go up at the time of sintering if 150 micrometers is exceeded it considers as the thing of 0.01 to 150 micrometer, and by less than 1 micrometer, since fiber length is short, as for this, the effectiveness of pull out in the fiber length is not fully acquired again, although it is necessary to consider as the thing of one to 2,000 micrometer since a problem is in a degree of sintering when 2,000 micrometer is exceeded Since the disadvantage that and a problem is in a degree of sintering will be brought about if this becomes inadequate [ the effectiveness which passed a little with it being under 5 capacity % to lanthanum comics night powder and which was described above ] and this exceeds 50 capacity %, the addition of this thing [ too ] It is needed for this to consider as five to 50 capacity %.

[0010] The specified quantity of the ceramic fiber described above to lanthanum comics night powder can be added, it can obtain by adding, fabricating and sintering the polyvinyl alcohol as a binder if needed, and the fiber consolidation conductivity ceramics of this invention is this sintering. What is necessary is just to blend ostomy agents, such as carbon powder, with adjustment of the porosity of this thing suitably with a binder, although what is necessary is just to consider as about 10 hours at 1,400 to 1,500 degree C.

[0011] in addition, about the lanthanum comics night sintered compact obtained by doing in this way This may be compound-ized with other members by approaches, such as thermal spraying and slurry spreading, and pore is prepared. Even if it uses it at the elevated temperature of 1,000 degrees C Bridging and pull out of ceramic fiber which were added in the sintered compact, According to the effectiveness of crack diffraction, progress of a crack is prevented, improvement in flexural strength is achieved, and decline in the conductivity of the lanthanum comics night sintered compact according this ceramic fiber to a conductive thing, then fiber addition can also be suppressed.

[0012]

[Embodiment of the Invention] An example and the example of a comparison are given and explained below about the gestalt of operation of this invention.

Formula ( $\text{La}_{0.85}\text{Sr}_{0.15}$ )  $0.9\text{MnO}_3$  whose example 1 mean particle diameter is 3-10 micrometers The diameter of fiber to the lanthanum comics night powder shown Fiber length is 30 micrometers in 0.2-3 micrometers. 20 capacity % addition of a  $\text{ZnO}$  whisker was done, and polyvinyl alcohol was added 3% of the weight as a binder to this, and it considered as the agglomerated powder for Plastic solids.

[0013] Subsequently, this agglomerated powder for Plastic solids is inserted in a die-press machine, and it fabricates by 0.5 ton/cm<sup>2</sup>, and is an outer diameter. A Plastic solid with a 135mmx thickness of 5mm is manufactured, this is set in atmospheric air, and it is sintering temperature. When it calcinates at 1,500 degrees C for 10 hours and considers as a sintered compact, porosity this thing by 146MPa(s) It was what is 7.2%. [ flexural strength ]

[0014] Formula (La<sub>0.85</sub>Sr<sub>0.15</sub>)<sub>0.9</sub>MnO<sub>3</sub> whose example 2 mean particle diameter is 3-10 micrometers To the lanthanum comics night powder shown, as an ostomy agent, mean particle diameter adds the carbon powder which is 5 micrometers 30% of the weight, and the diameter of fiber it 0.2-3 micrometers and fiber length are 30 micrometers. 3 % of the weight of polyvinyl alcohol as 20 capacity % and a binder was added, and the ZnO whisker was made into the agglomerated powder for Plastic solids.

[0015] Subsequently, this agglomerated powder for Plastic solids is inserted in a die-press machine, and it fabricates by 0.5 ton/cm<sup>2</sup>, and is an outer diameter. A Plastic solid with a 135mmx thickness of 5mm is manufactured, this is set in atmospheric air, and it is sintering temperature. When it calcinates at 1,450 degrees C for 10 hours and considers as a sintered compact, flexural strength this thing It was that whose porosity is 20% in 87MPa.

[0016] Formula (La<sub>0.85</sub>Sr<sub>0.15</sub>)<sub>0.9</sub>MnO<sub>3</sub> whose example of comparison 1 mean particle diameter is 3-10 micrometers To the lanthanum comics night powder shown Add the polyvinyl alcohol as a binder 3% of the weight, and the agglomerated powder for Plastic solids is manufactured. This is inserted in a die-press machine, and it fabricates by 0.5 ton/cm<sup>2</sup>, and is an outer diameter. After manufacturing a Plastic solid with a 135mmx thickness of 5mm, It sets in atmospheric air and is sintering temperature. When it calcinated at 1,500 degrees C for 10 hours, the precise sintered compact was manufactured and this deflection reinforcement and porosity were investigated, this flexural strength is porosity at 103MPa(s). It was 4.9%.

[0017] Formula (La<sub>0.85</sub>Sr<sub>0.15</sub>)<sub>0.9</sub>MnO<sub>3</sub> whose example of comparison 2 mean particle diameter is 3-10 micrometers 30 % of the weight of carbon powder whose mean particle diameter is 5 micrometers as an ostomy agent at the lanthanum comics night shown, Add 3 % of the weight of polyvinyl alcohol as a binder, and the agglomerated powder for Plastic solids is manufactured. This is inserted in a die-press machine, and it fabricates by 0.5 ton/cm<sup>2</sup>, and is an outer diameter. A Plastic solid with a 135mmx thickness of 5mm is manufactured. This is set in atmospheric air and it is sintering temperature. When it calcinates at 1,450 degrees C for 10 hours and a porosity sintered compact is manufactured, flexural strength The sintered compact whose porosity is 24% was obtained by 54MPa.

[0018]

[Effect of the Invention] Although this invention relates to the fiber consolidation conductivity ceramics, since the conductive porosity sintered compact with which flexural strength does not fall is obtained even if according to this lanthanum comics night powder to flexural strength is large and porosity is high, the conductive porosity sintered compact especially made useful as a cel base material for solid-state electrolytic type fuel cells is obtained.

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[Translation done.]

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2688250	CATHODE ELECTRODE POLE	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:16
L2	889	1 WITH ((CERAMIC LANTHAN\$4 LA INORGANIC) NEAR7 (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:50
L3	800	2 NOT ("SOLID OXIDE" "SOLID ELECTROLYTE" SOFC)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:28
L4	89	2 NOT 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:27
L5	17365	429/12-46.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:27
L6	0	5 with (internal\$4 near2 reform\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:30
L7	251	5 and ((anode electrode pole) with (internal\$4 near2 reform\$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:28

## EAST Search History

L8	63	7 NOT ("SOLID OXIDE" "SOLID ELECTROLYTE" SOFC)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:31
L9	188	7 not 8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:29
L10	44	9 and (reform\$4 near7 (nickel nicu chromite\$1 ceo2! ceria! "cerium oxide" "ceo.sub.2"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:33
L11	405	(internal\$4 near2 reform\$3)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:31
L12	349	11 NOT ("SOLID OXIDE" "SOLID ELECTROLYTE" SOFC)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:36
L13	56	11 not 12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:32
L14	28413	(cataly\$4 electrocataly\$5) with reform\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:43

## EAST Search History

L15	2657	14 with ( (nickel nicu chromite\$1 ceo2! ceria! "cerium oxide" "ceo.sub.2"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:37
L16	2384	15 NOT ("SOLID OXIDE" "SOLID ELECTROLYTE" SOFC)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:33
L17	273	15 not 16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:33
L18	24	("3488226"   "4182795"   "4365007"   "4454207").PN. OR ("4567117").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/07 16:36
L19	46501	("SOLID OXIDE" "SOLID ELECTROLYTE" SOFC)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:36
L20	517845	(anode "negative electrode" "negative pole" "fuel electrode" "fuel pole")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:36
L21	91096	(cataly\$4 electrocataly\$5) with ( (nickel nicu chromite\$1 ceo2! ceria! "cerium oxide" "ceo.sub.2"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:37

## EAST Search History

L22	1810	20 same 21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:39
L23	223	20 same 21	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:37
L24	204	23 not 19	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:37
L25	223	23 not 24	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:37
L26	19	23 not 24	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:37
L27	1402	22 not 19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:39
L28	408	22 not 27	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:39
L29	389	28 not 26	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:39

## EAST Search History

L30	26	29 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:43
L31	363	29 not 30	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:39
L32	18795	(cataly\$4 electrocataly\$5) near2 reform\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:43
L33	17485	32 not 19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:43
L34	1310	32 not 33	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:43
L35	92	34 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:07
L36	1218	34 not 35	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:50



## EAST Search History

L37	35	1 WITH (( LANTHAN\$4 LA lsr lsm lsc lsc) NEAR7 (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:56
L38	4	"09045347"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:56
L39	17365	429/12-46.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:56
L40	3	39 and (( LANTHAN\$4 LA lsr lsm lsc lsc) NEAR7 (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:58
L41	0	39 and ((lasro lasrmo))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:57
L42	1983	39 and (( LANTHAN\$4 LA lsr lsm lsc lsc))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:57
L43	363	39 and ((lsr lsm lsc lsc))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:57

## EAST Search History

L44	18	39 and (( LANTHAN\$4 LA lsr lsm lsc lsc) with (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:02
L45	97224	h01m008\$.ipc. (( LANTHAN\$4 LA lsr lsm lsc lsc) with (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 16:59
L46	16	(h01m008\$.ipc. h01m004/8?.ipc. h01m004/9?.ipc.) and (( LANTHAN\$4 LA lsr lsm lsc lsc) with (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:01
L47	145317	(h01m008\$.ipc. h01m004/8?.ipc. h01m004/9?.ipc. (fuel adj (cell battery)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:02
L48	5936	(( LANTHAN\$4 LA lsr lsm lsc lsc) with (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:02
L49	6033	(( LANTHAN\$4 LA lsr lsm lsc lsc perovskite) with (FIBER FIBROUS FIBRIL NANOFIBER NANOFIBRE MICROFIBER MICROFIBRE FIBROUS))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:11
L50	5949	49 not 47	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:02

## EAST Search History

L51	84	49 not 50	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:02
L52	3052	(( LANTHAN\$4 LA Isr Ism Isc Isco perovskite) with (grains))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:07
L53	2943	52 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:12
L54	109	52 not 53	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:07
L55	137	(( LANTHAN\$4 LA Isr Ism Isc Isco perovskite) with ("aspect ratio"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:11
L56	137	55 not (fuel adj (cell battery))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/07 17:12
L57	7	(US-4567117-\$ or US-4548876-\$). did. or (JP-03283266-\$ or JP-09129257-\$).did. or (JP-09045347-\$ or JP-09087022-\$ or US-20040001995-\$).did.	USPAT; JPO; DERWENT	OR	ON	2008/01/07 17:13